

Mannesmann VDO AG

Kruppstraße 105  
60388 Frankfurt  
4326

I CLAIM:  
~~Patent Claims~~

- 5
- Suba
- 10
- 15
- 20
- 25
- 30
- 35
1. A device for actuating a security device, preferably for securing a motor vehicle against unauthorized use, in which a control unit has means for transmitting a first coded electromagnetic signal (stimulus signal), in which a portable transmitter (radio key) has means for receiving the stimulus signal and for transmitting a second coded signal (enable signal), and in which the control unit is connected to the security device and actuates the latter if the enable signal is received and recognized, wherein both the control unit and the radio key have means for altering the carrier frequency of the coded electromagnetic signals and wherein they alter this frequency during signal transmission in a manner which is known only to the control unit and to the radio key.
  2. The device as claimed in claim 1, wherein the radio key has a narrowband transmitter whose transmission frequency can be controlled and wherein the radio key alters its transmission frequency over intervals of time when transmitting signals.
  3. The device as claimed in claim 2, wherein the control unit has a tunable narrowband receiver having the same frequency range as the transmitter in the radio key.
  4. The device as claimed in one of the preceding claims, wherein the manner in which the carrier frequency is to be changed is contained in the stimulus signal (1) as a coded information item for transmission to the radio key.
  5. The device as claimed in claim 4, wherein the stimulus signal (1) contains a random number and the carrier frequencies are determined by applying a cryptoalgorithm (3) to this stimulus signal (1) and, in

002280-0644960

this context, particularly to the random number contained in the stimulus signal (1).

6. The device as claimed in claim 4, wherein the carrier frequency selection at the receiver and  
5 transmitter ends is determined, using the coded information item in the stimulus signal, by means of a cryptographic method in the radio key and in the control unit independently of one another.

7. The device as claimed in one of the preceding  
10 claims, wherein the signal transmission takes place over a spectrum of different carrier frequencies and wherein the enable signal contains a coded information item for modulating this spectrum.

002280" 06E4H960